

**Abstract**

Modular X-ray tube (10) and method for the production of such an X-ray tube, in which an anode (20) and a cathode (30) are arranged in a vacuumized inner space (40) situated opposite each other, electrons ( $e^-$ ) being  
5 produced at the cathode (30) and X-rays ( $\gamma$ ) at the anode (20). The X-ray tube (10) according to the invention comprises a multiplicity of acceleration modules (41,...,45), complementing one another, and each acceleration module (41,...,45) comprises at least one potential-carrying acceleration electrode (20/30/423/433/443). A first acceleration module (41) thereby comprises the  
10 cathode (30), a second acceleration module (45) the anode (20). The X-ray tube (10) further comprises at least one other acceleration module (42,...,44). In particular, the X-ray tube according to the invention can possess a re-closeable vacuum valve, enabling individual defective parts of the tube (10) to be replaced in a simple manner or enabling the tube (10) to be modified in a  
15 modular way.

(Figure 5)